
IN THIS ISSUE: ACUTE GASTROENTERITIS

Acute Gastroenteritis: Norovirus Most Common Cause**Introduction**

Acute gastroenteritis, a diarrheal disease of rapid onset, with or without nausea and vomiting, is estimated to cause 179 million illnesses, 2-3 million ambulatory visits and 900,000 hospitalizations per year in the United States (US).^{1,2} Viruses (norovirus, rotavirus, adenovirus, and astrovirus) cause 75% to 90% of these illnesses, followed by bacteria (e.g. *Shigella*, *Campylobacter*), parasites (e.g. *Giardia*), toxins, and chemicals.^{3,4} Norovirus is the most common cause of viral gastroenteritis (commonly referred to as the “stomach flu” although not caused by flu viruses) across all age groups, worldwide.⁴

Epidemiology

Norovirus causes 19-21 million illnesses, 109,000 hospitalizations, and 900 deaths (mortality occurring mostly among those over the age of 65-years), annually in the US.⁵ Norovirus impacts all age groups, provides little immunity for reinfection, and spreads extremely easily (and quickly).⁶ Outbreaks of gastroenteritis, of which norovirus is the most common etiology, are most often transmitted person-to-person, by contaminated surfaces or through contaminated food.⁴ Outbreaks most often occur between November and April but can occur anytime of the year.^{1,5} The most common settings for norovirus outbreaks are healthcare facilities, restaurants and catered events, schools, childcare centers, and cruise ships.⁷ The National Outbreak Reporting System (NORS) tracks reported outbreaks in the US.^{4,8} According to NORS, the highest count of gastroenteritis outbreaks in the US occurred in 2016 (4,291 outbreaks), with Nevada’s highest in 2015 (74 outbreaks) and Washoe County in 2021 (41 outbreaks).^{4,8,9}

Prevention

Proper Handwashing:¹⁰ Wash hands often, with soap and water, for at least 20 seconds especially after using the toilet or changing diapers, before

eating, preparing, or handling food, before giving or taking medicine, after shaking hands, and after touching common surfaces. Wash hands especially after cleaning vomit or feces. Hand sanitizers do not work well against norovirus. Norovirus can remain in vomit or feces before symptoms appear and up to two weeks after recovery.

Food Safety:¹⁰ Wash fruits and vegetables, cook oysters and shellfish thoroughly to a proper internal temperature of 145°F, and routinely clean kitchen utensils, counters, and other surfaces. Those who are sick should not prepare food for others for at least two days after symptoms stop.

Cleaning & Disinfection:¹⁰ Conduct immediate cleaning of the area where vomit or diarrhea has occurred using a chlorine bleach solution with a concentration of 1,000 to 5,000 ppm (5 to 25 tablespoons of household bleach per gallon of water) and let set for at least five minutes. Alternatively, use an EPA-registered disinfecting product against norovirus (<https://www.epa.gov/pesticide-registration/list-g-antimicrobial-products-registered-epa-claims-against-norovirus-feline>) and follow the product label. Clean the area again with soap and water. Wear rubber gloves, disposing of them afterwards along with any paper towels used. Soiled clothes should be washed and dried at the highest temperatures.

Institutional Settings:¹¹ Healthcare facilities and other institutional settings (e.g., daycare, schools), are at higher risk for increased transmission and severity due to the nature of their facilities and populations (e.g., young, sick, larger populations).

- Prevention for Healthcare Facilities: <https://www.cdc.gov/hai/organisms/norovirus.html>
- Prevention for Childcare Programs: <https://www.nnph.org/programs-and->

[services/environmental-health/child-care-facilities-inspections.php](https://www.nnpb.org/programs-and-services/environmental-health/child-care-facilities-inspections.php)

- Prevention for Schools, Community Living: <https://www.nnpb.org/programs-and-services/environmental-health/food-protection-services/foodborne-illness-and-outbreak-program.php>

Signs & Symptoms⁶

Common symptoms of norovirus include diarrhea, vomiting, nausea, stomach pain, fever, headache, and body aches. Symptoms typically occur 12 to 48 hours after exposure with resolution of symptoms in 1 to 3 days. Repeated vomiting and diarrheal episodes can induce dehydration, especially in young children and older adults, which can lead to serious complications. Dehydration symptoms include decreased urination, dry mouth or throat, dizziness, and in children, fussiness and crying with few or no tears.

Diagnosis & Testing

Norovirus is generally diagnosed based on symptoms as testing is not widely performed to guide clinical management of individual patients.¹² However, testing of stool specimens may be used during outbreak investigations. The most common test used is real-time reverse-transcription quantitative PCR, but some commercial enzyme immunoassays (EIAs) are also available. Molecular testing for norovirus, and other causes of gastroenteritis (viral, bacterial, and parasitic) are available through the Nevada State Public Health Laboratory.¹³

Treatment⁶

There is no specific treatment for norovirus. Prevention of dehydration is the main supportive treatment. This includes drinking plenty of liquids (without caffeine or alcohol), with emphasis on over the counter rehydration fluids that can replace nutrients and minerals lost from vomiting and diarrhea. If severe dehydration occurs, it may lead to hospitalization and intravenous treatment of fluids.

Reporting

Sporadic norovirus or gastroenteritis is not reportable in Nevada; however, any suspect outbreak of either is reportable per Nevada law (NAC 441A). **To report an outbreak or a suspected**

outbreak, please call 775-328-244, fax your report to the NNPH at 775-328-3764, or report securely online here:

<https://washoecountynv.seamlessdocs.com/f/OutbreakReportingForm>.

The list of reportable communicable diseases and reporting forms can be found at:

<http://tinyurl.com/WashoeDiseaseReporting>

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